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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DAVIS, OCTAVIA L

ART UNIT

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2855

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,029	Applicant(s) PECHER ET AL.	
	Examiner OCTAVIA DAVIS	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 3, 9, 10, 15, 16, 19 – 21 and 23 - 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al (6,948,856) in view of Bierhoff et al (5,350,916).

Regarding claims 1, 9, 10 and 19, Takizawa et al disclose a rolling bearing device and ring with a sensor for the rolling bearing device comprising a sensor element 11, conductive members 15b and electronic components 14, 16 connected to a flexible carrier material 2, 3, 11 (See Col. 6, lines 6 – 8 and 36 – 41 and Col. 10, lines 1 - 4) but does not disclose that the sensor element is connected by signaling technology via contacting elements to the strip conductors, the contacting elements being formed in the flexible carrier material by means of through-hole plating elements. However, Bierhoff et al disclose an optoelectronic device and method of manufacturing the same with an electrically insulating medium having a strip-shaped flexible foil comprising detectors 3, 4 connected by signaling technology via contacting elements 6, 8 to strip conductors 6a – 6e, 8a—8e, the contacting elements being formed in the flexible carrier material by means of through-hole 51, 52 plating elements 50 (Col. 5, lines 24 – 29 and Col. 7, lines 10 – 17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Takizawa et al according to the teachings of Bierhoff et al for the purpose of, advantageously providing a device that can be manufactured in an inexpensive and easy manner (See Bierhoff et al, Col. 1, lines 47 – 50).

Regarding claims 2 and 3, in Takizawa et al, the sensor element, the conductive members and the electronic components are located above and below the material 11 (See Fig. 1).

Regarding claims 15 and 16, in Takizawa et al, the sensor element, the conductors and the electronic components are formed on the materials by deposition of insulating materials (See Col. 6, lines 27 – 29 and 36 – 41).

Regarding claim 20, in Takizawa et al, the adhesive material is applied to a material 202, 203 and includes a protective film 283 (See Col. 20, lines 40 – 44).

Regarding claims 21 and 23, in Takizawa et al, the surface of the sensor element and the conductors is covered with an insulating layer 12 (See Col. 6, lines 27 – 35).

Regarding claims 24 and 27, in Takizawa et al, the electronic components, the insulating layers and the material include the insulating material 12 (See Col. 6, lines 27 – 35).

Regarding claims 25 and 26, in Takizawa et al, the roller bearing includes a groove and has rolling bodies and an outer ring 1 with a recess 8a, 8b (See Col. 6, lines 4 – 7 and 14 - 19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 7, 8, 11 – 14, 17, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al (856') in view of McDearmon (2002/0092360 A1).

Regarding claims 4 and 7, Takizawa et al disclose all of the limitations of these claims except that the sensor element is a strain gage and a resistance bridge with a conductor of copper. However, McDearmon discloses a bearing assembly with sensors for monitoring loads comprising wire strain gage sensor element(s) 70 formed in a bridge configuration (See Pg. 4, Paragraph 0042, lines 1 – 11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Takizawa et al according to the teachings of McDearmon for the purpose of, advantageously providing strain sensors to generate electrical signals of a type and mode which are usable by other automotive devices which function to provide dynamic control a vehicle under various loading conditions (See McDearmon, Pg. 2, Paragraph 0014, lines 1 - 6).

Regarding claims 8 and 11 - 14, Takizawa et al disclose all of the limitations of these claims except that the sensor element is connected by signaling technology via contacting elements to the conductors, the elements being formed in the flexible material and aligned perpendicularly. However, in McDearmon, metallic foil resistance elements 74, 76 including legs 78 are bonded to the carrier 72 (See Pg. 3, Paragraph, 0038, lines 1 – 4 and Page 4, lines 1 - 22) and the carrier material 72 is a polymeric material (See Pg. 4, Paragraph 0038, lines 1 – 13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Takizawa et al according to the teachings of McDearmon for the

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purpose of, advantageously enabling the carrier to expand and contract with the housing (See McDearmon, Pg. 4, Paragraph 0038, lines 11 – 13).

Regarding claims 17 and 18, Takizawa et al disclose all of the limitations of these claims except that one of the electronic components is an amplifier. However, it would have been obvious to incorporate an amplifier since these are well known types of electronic components (See KSR, 82USPQ2d, 1385 (2007)).

Regarding claim 22, Takizawa et al disclose all of the limitations of these claims except that the insulating layer is a solder resist. However, it would have been obvious to incorporate a solder resist since these are well known types of insulators (See KSR, 82USPQ2d, 1385 (2007)).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 6 and 29 – 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al (6,948,856) in view of Tward (4,433,580).

Regarding claims 5 and 29 - 31, Takizawa et al disclose all of the limitations of these claims except that the sensor element is a capacitor with at least two plate-like conductor areas which are opposite one another and thereby separated from one another by the flexible carrier material, the

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material being a dielectric between the conductor areas, the at least two conductor areas comprising a first conductor area and a second conductor area, the first conductor area being provided on an upper side of the carrier material and the second conductor area being arranged on an underside of the carrier material. However, Tward discloses a pressure transducer comprising a sensor element 10 that is a capacitor with at least two plate-like conductor areas b', c', b'', c'' which are opposite one another and thereby separated from one another by a flexible carrier material 18, the material being a dielectric between the conductor areas, the at least two conductor areas comprising a first conductor area and a second conductor area, the first conductor area being provided on an upper side of the carrier material and the second conductor area being arranged on an underside of the carrier material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was to modify Takizawa et al according to the teachings of Tward for the purpose of, advantageously and uniquely combining four capacitances into classic wheatstone bridge circuitry including an alternating current generator and current flow detection, measurement and value indicating circuitry (See Tward, Col. 2, lines 51 - 57).

Regarding claim 6, in Takizawa et al, the conductor areas 15b are capable of being elastically deformed (See Col. 10, lines 1- 8).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al (6,948,856) and Tward (4,433,580), as applied to claims 5, 6 and 29 – 31 above, and further in view of McDearmon (2002/0092360 A1).

Regarding claim 28, Takizawa et al and Tward disclose all of the limitations of these claims except that the contacting elements is aligned perpendicularly in relation to the longitudinal and transverse extents of said carrier material in the manner of surface areas. However, in McDearmon, metallic foil resistance elements 74, 76 including legs 78 are bonded to the carrier 72 (See Pg. 3, Paragraph, 0038, lines 1 – 4 and Page 4, lines 1 - 22) and the carrier material 72 is a polymeric material (See Pg. 4, Paragraph 0038, lines 1 – 13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Takizawa et al and Tward according to the teachings of McDearmon for the purpose of, advantageously enabling the carrier to expand and contract with the housing (See McDearmon, Pg. 4, Paragraph 0038, lines 11 – 13).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fukaya et al (5,986,459) disclose a semiconductor device testing carrier and method of fixing semiconductor device to a testing carrier.

Tward (4,433,580) discloses a pressure transducer.

Colla et al (5,090,246) disclose an elastomer type low pressure sensor.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Octavia Davis whose telephone number is 571-272-2176. The examiner can normally be reached on Mon through Thurs from 9 to 5. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz, can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Edward Lefkowitz/

Supervisory Patent Examiner, Art Unit 2855

OD/2855

7/1/08

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